

Using Microsoft Excel for Traffic Crash Reconstruction

3-Day Class, May 3,4,5, 2017 at the Sudbury Police Department

Pre-Approved for 24 ACTAR CEUs

Why use Excel for Traffic Crash Reconstruction? Consider the following points:

- Errors have been found in commercial accident reconstruction software.
- You do not know what goes behind the scenes in commercial accident reconstruction software because you did not program it.
- Most jurors have at least heard of Excel because it comes free with many store-bought computers. Jurors are comfortable with Excel.
- You can testify that you programmed the equations yourself and that nothing unusual is happening behind the scenes.
- With Excel, you are not stuck with a pre-formatted results output. Your data may be customized for each reconstruction that you do.
- Excel can handle multiple phases of a crash reconstruction, while commercial software must deal with one phase at a time. For example, a spin analysis may be combined with any number of energy losses in one spreadsheet.
- There is not one accident reconstruction program that does everything. Excel can be programmed to do just about anything. You are only limited by your imagination.

Why take this course? In addition to learning to use Excel for traffic crash reconstructions, the student will learn additional concepts in accident reconstruction such as:

- Spin analysis
- The Wood narrow object impact algorithm
- Wooden utility pole break fracture energy calculations
- Simple damage analysis (crush)
- Calculation of stiffness coefficients from NHTSA barrier crash test data
- Special attention is made to using Excel for ranging crash reconstructions (sensitivity analysis). This is accomplished through the use of charts, data tables, Monte Carlo analysis and the method of finite differences.
- The student will receive enough information to program their own Excel-based application that may be used by all members of their unit. The application will look and feel like just another Windows-based program.
- The student will learn how to program their own user-defined functions (UDF). UDFs permit the student to hard code more difficult accident reconstruction formulas (think airborne, momentum) directly into Excel, so the formula may be used again at a later date without actually programming the formula again.

Prerequisites: The student must have successfully completed an accident reconstruction/ technical class.

Manual: Using Microsoft Excel for Traffic Crash Reconstruction by Andrew Rich. A copy is provided to each student.

Required for class by each student: A laptop computer running Microsoft Excel 2007 or later.

Instructor(s): Andrew Rich, BSME, ACTAR of Rich Consulting, LLC
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Registration: www.Rich-LLC.com/training

Tuition: Early bird pricing \$375.00 before March 1, 2017, \$475.00 after March 1.